

CURRICULUM VITAE

VIRUPAKSHI S

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Career objective:

I am seeking a challenging position which could utilize my full potential and satisfy the urge to learn more in the thrust research areas of Biotechnology – Molecular Genetics, Cell Biology, Cancer biology, Immunology, Biochemistry and Developmental Biology and work honestly for the development of science.

Educational qualification:

<i>Degree</i>	<i>Year of Passing</i>	<i>Subject</i>	<i>University</i>	<i>Class obtained</i>
Ph.D.	Submitted on 11/11/2005	Biotechnology	Gulbarga University, Gulbarga	
M. Sc.	2000	Biotechnology	Gulbarga University, Gulbarga	1 st class
B. Sc.	1998	Chemistry, Botany, Zoology	Gulbarga University, Gulbarga	Second class

Ph.D. dissertation: “Genomic Studies on Some Sugarcane Cultivars”

Brief Description: My Ph. D., research work includes screening and characterization of elite sugarcane genotypes with respect to their red rot disease resistant/susceptible by using chloroplast and mitochondrial DNA with Restriction endonucleases, RAPD-PCR and ISSR-PCR molecular markers analysis.

We are able to select the specific restriction enzymes to identify the red rot disease resistant and susceptible sugarcane genotypes and also found substantial polymorphism in chloroplast and mitochondrial DNA RAPD and ISSR analysis. The phylogenetic tree generated by this data could able bifurcate disease resistant and susceptible cultivars.

The sugarcane chloroplast DNA phylogeny has been studied by amplification and sequencing of non-coding *trnT-trnL-trnF* regions of the cultivar Co 86032. The significance of the nucleotide sequence was analyzed by BLAST search. The sequence has showed significant alignment (80%) with other chloroplast DNA sequence of *Saccharum* species available in the GeneBank (**DQ355031**).

List of Publications:

1. **Virupakshi, S.**, Manjunatha, B.R. and Naik, G.R. (2002) *In vitro* flower induction from a juvenile explants of sugarcane, *Saccharum officinarum* var. CoC 671. *Curr. Sci.* 83 (10): 1195-1197.
2. Johnvesly, B., **S.Virupakshi**, Gundamma.N.Patil, Ramalingam, **Gajanan.R.Naik** (2002). Cellulase-free Thermostable Alkaline Xylanase from Thermophilic and Alkalophilic *Bacillus* sp. JB-99. *J.Microbiol Biotechnol.* 12 (1): 153 – 156.
3. **Virupakshi, S.**, Manjunatha, B.R. and Naik, G.R. (2003) Sugarcane research blooms. *NatureNewsIndia.* March, pp - 6.
4. Naik G. R, Manjunatha B. R, **Virupakshi S** and Gireesh Babu K (2003) Cell and tissue culture for selection of biotic and abiotic stress resistant sugarcane lines and their molecular characterization. *Int. Sem. On Sugarcane Genomics and Genetic Transformation.* pp 30 – 32.
5. Manjunatha, B. R., **Virupakshi S** and Naik G.R. (2003) Peroxidase Isoenzyme polymorphism in popular sugarcane cultivars. *Curr. Sci.* 85 (9): 1347 - 1349.
6. **S Virupakshi**, Gireesh Babu K, Satish R Gaikwad and Gajanan R. Naik (2005) Production of a xylanolytic enzyme by thermoalkaliphilic *Bacillus* sp. JB-99 in solid state fermentation. *Process Biochem* 40: 431 - 435.
7. **Virupakshi S.**, K. Gireesh Babu and Gajanan R. Naik (2005) Partial purification and Characterization of Thermostable Alkaline β -Mannanase from *Bacillus* sp. JB-99 Suitable for Pulp Bleaching. *J. Microbiol Biotechnol* 15(4): 689 - 693.
8. Naik G.R., **Virupakshi S** and Gireesh Babu K (2005) Molecular markers for salinity resistance in salt adapted sugarcane somaclones and other local cultivars. 15th IPNC, held on Beijing, China, on 14-19 September (accepted).
9. Naik G. R., Manjunatha B. R., **Virupakshi S** and Gireesh Babu K (2005) Genomic studies in sugarcane for reshaping the Indian sugar industry. *Vignana ganga* 4: 85 - 96.
10. **Virupakshi, S.** and Naik G. R. (2006) Purification and Characterization of a novel thermostable, alkaline, low molecular weight cellulase-free xylanase from thermoalkalophilic *Bacillus* sp. JB-99. **Appl. Microbiol. Biotechnol** (Communicated)

11. **Virupakshi S** and Naik G. R (2006). A simple and rapid method for isolation of pure Chloroplast and Mitochondrial DNA from sugarcane (*Saccharum officinarum* L.) leaf sample. *Current Science* (Communicated).
12. **Virupakshi S** and Naik G. R (2006) Restriction digestion polymorphism analysis of Chloroplast and Mitochondrial DNA of Indian sugarcane genotypes with respect to red rot disease resistance. *Plant Molecular Biology* (Communicated).
13. **Virupakshi S** and Naik G. R. (2006) RAPD marker analysis on Chloroplast and Mitochondrial DNA of sugarcane cultivars based on resistance and susceptible to red rot disease. *Theor. Appl. Genet* (Communicated).
14. **Virupakshi S** and Naik G. R (2006) Analysis of Chloroplast and Mitochondrial Genome of Sugarcane cultivars for red rot disease resistance using Inter Simple Sequence Repeat (ISSR) primers. *Theor. Appl. Genet* (Communicated).
15. **Virupakshi S** and Naik G. R (2006) A phylogenetic analysis of sugarcane (*Saccharum officinarum* L.) variety Co 86032 based on ITS and trnT-L-F sequence of chloroplast DNA using universal primers. *Current Genetics* (Communicated).
16. **Virupakshi S** and Naik G. R (2006) A comparative analysis of restriction digestion, RAPD and ISSR marker analysis on chloroplast and mitochondrial DNA of sugarcane cultivars for molecular marker analysis. *Molecular Evolution* (Manuscript under preparation).

Conference Attended:

1. Attended two day workshop “**Remote Sensing Awareness**”, sponsored by Regional Remote Sensing Service Centre, Department of Space, Government of India, Indian Space Research Organisation, held at Department of Studies in Applied Electronics, Gulbarga University, Gulbarga on 11 – 12th October, 2000.
2. Participated as a delegate and made a poster presentation on “**Biotechnological Approaches for Sugarcane Improvement**” in 90th INDIAN SCIENCE CONGRESS, held at Jnana Bharathi Campus, Bangalore University during 3 – 7th, 2003.
3. Attended “**International Seminar on Sugarcane Genomics and Genetic Transformation**” Held at Vasantdada Sugar Institute, Puna, on 28th – 29th August 2003.
4. Successfully participated in the National Seminar on “**Advances in Genetics and Plant Breeding – Impact of DNA Revolution**” and making a paper presentation on “**Genetic Polymorphism in Biotic and Abiotic Stress Resistant Sugarcane Somaclones**” organized by Indian Society of Genetics & Plant Breeding. Held at Department of Genetics and Plant Breeding, University of Agricultural Science Dharwad on October 30 – 31, 2003.

5. Attended one day International Seminar on **“Future prospects: Bridging the gap between University and Pharma Industry through Dialogue and Collaboration”** held at Department of Chemistry, Gulbarga University, Gulbarga on 5th November 2004.
6. Paper presented on **“Biochemical and molecular characterization of sugarcane somaclones developed against salt stress”**, for 2004-National Seminar on emerging trends in Applied Botany, seed science & Technology, at Mysore; pp.5.
7. Attended and presented a paper on **“Biochemical and molecular characterization of sugarcane somaclones developed against salt stress”** in **“2004- National seminar on emerging trends in applied botany, seed science and technology”** held at Department of Studies in Applied Botany, seed pathology and Biotechnology, Mysore University, Mysore on 4th – 6th November 2004.
8. Completed successfully the 4th SERC School in Chronobiology sponsored by Department of Science and Technology, from 24/12/2005 to 04/01/2006 at Department of Biochemistry and Biotechnology, Annamalai University, Annamalainagar, Tamil Nadu, India.
9. Abstract of the paper entitled **“Nuclear and Organellar Genome analysis of Sugarcane somaclones developed against salt stress”** accepted for poster presentation in the National Symposium on ‘Biotechnology-Trends & Prospectives’ held during 17th and 18th of February 2006 at Department of Biotechnology, Sri. Krishnadevaraya University Anantapur (AP), India.

Awards/Credentials:

1. Awarded **Senior Research Fellow (SRF)** by the Council of Scientific and Industrial Research (CSIR), New Delhi. (2004).
2. Acknowledged for the preparation of final manuscript of text Book on **“Introduction to Basic Molecular Biology Techniques”** (2003) Himalaya Publishing House. Mumbai, India.
3. I have been selected for the 40th series of **“Young Research Scholar”** programme conducted by All India Radio (AIR) on research topic **“Sugarcane Crop improvement through Random Amplified Polymorphic DNA (RAPD) technique”** in Gulbarga on 20/08/2003.
4. My research work on **“In vitro flower induction from a juvenile explants of sugarcane, *Saccharum officinarum* var. CoC 671”** had been published in the daily News Paper **“THE HINDU” educationPlus** on Monday, August 23, 2004.

5. My research article “**Sugarcane Research Blooms**” had published in the University NEWSLETTER as **Silver Jubilee Year – 2004 special** in Vol 10 (3), July – September 2004.
6. Secured **Second Place** in the **Ball Badminton Fivers** conducted by SUJM College, Harapanahalli in the year 1993 – 94.
7. Qualified **General Knowledge Examination** with First Class conducted by Chetan Vidyalaya, Biruer, in the year 1993.
8. Passed **General Knowledge Test 1992** with 48% marks (Roll No 7096) conducted by Aruna Book House (ABH), Nizamabad (South India).

Research Experience:

1. Undergone hands on training on “**Basic Molecular Biology Techniques**” held at Bangalore Genei Pvt. Ltd, Bangalore during M. Sc., in the academic year 1998 – 1999.
2. Undergone project work for the partial fulfillment of Master of Biotechnology degree at Gulbarga University, Gulbarga on a topic “**Extraction of Secondary metabolites from *Withania somnifera* L. (Ashwagandha) through tissue culture technology**” for the academic year 1999 - 2000.
3. Successfully advised post graduate students for their project work on the following topics:
 - a) “Tissue culture and Micropropagation of sugarcane (*Saccharum officinarum* L.) Var. Co 86032” for the year 2001 – 2002.
 - b) “Isolation, Purification and Characterization of a novel low molecular weight, Cellulase-free thermostable alkali-tolerant Xylanase from thermoalkaliphili *Bacillus* sp. JB-99” for the year 2002 - 2003.
 - c) “Amplification of two Xylanase genes using species-specific primers from Thermostable Alkalophilic *Bacillus* sp. JB-99 by Polymerase Chain Reaction” for the year 2003 -2004.
4. Three years teaching experience at the Department of Biotechnology, Gulbarga University, Gulbarga for Post Graduate students in Biotechnology (taught Plant Biotechnology & Molecular Biology, Genetic Engineering, Enzyme technology, Biophysical Techniques and Immunology) from 2002 to 2005.
5. Presently working as a Senior Research Fellow (SRF) in the Dept. of Biotechnology, Gulbarga University, Gulbarga in the project entitled “**Pilot scale production of alkaline protease and cellulase free xylanase from *Bacillus* sp. JB-99**” funded by CSIR, New Delhi (Grant No. 37 (1129)/03/EMR-II).

6. I have designed Solid State Fermentation (25kg capacity) indigenously for the production alkaline protease and cellulase-free xylanase from *Bacillus* sp. JB-99.

Expertise:

Biochemical studies

- Enzyme assays (on PAGE - alkaline phosphatase, acid phosphatase, dehydrogenases, peroxidase, superoxide dismutase)
- Biochemical analysis of most of the biomolecules- carbohydrates, DNA, RNA, lipids.

Protein Chemistry Techniques

- Isolation and Characterization of plant & bacterial proteins
- Familiar with most of the protein purification techniques.
- Chromatography techniques-
- Ion-exchange chromatography
- Molecular sieve chromatography
- Gel elution of proteins
- Electrophoretic techniques – SDS-PAGE, Native PAGE
- Thin layer chromatography
- Paper chromatography- specially for amino acid analysis
- Generation and partial purification of antibodies of rabbit.

Microbiological techniques

- Isolation and maintenance of microorganisms- bacteria, bacteriophage and fungi
- Microscopic studies using – light microscope, phase contrast microscope, stereomicroscope and fluorescence microscope.

Molecular Biology techniques

- Isolation of DNA/RNA from plant, animal and microbial source
- Isolation and maintenance of bacteriophages
- Construction of partial genomic DNA libraries
- Radioactive labeling and probe preparation
- PCR
- Cloning of PCR fragments
- Molecular marker analysis like RAPDs, RFLPs, Microsatellites, ISSRs, AFLPs, STS and SCAR
- Blotting techniques – Southern, Northern, Western and Dot blot.
- Electroporation
- Particle bombardment
- Gel electrophoresis

- Single Cell Gel Electrophoresis (comet assay)
- Expression and analysis of recombinant clones

Other techniques

- Plant cell and tissue culture
- Solid state (Koji Fermentor) and submerged fermentation, aerobic and anaerobic fermentation using automated fermentor (B. Braun)
- Photography and Microphotography
- Chromosome preparation, staining, banding techniques, Karyotyping.

Instruments (can handle independently)

- Electrophoretic set up-protein and DNA/RNA (Bio Rad and Biotek)
- UV-Vis spectrophotometer (Elico)
- High Speed refrigerated and Ultra centrifuge (Sorval, Dupont and Beckman)
- Column chromatography set up (Pharmacia)
- Gel documentation system (Vilber Lourmat)
- Thermal cyclers (Perkin Elmer and MJ Research - PTC100 & PTC200)
- Rotary Evaporator (Savant)
- Liquid Scintillation counter (Wallac)
- Fermentor (B Braun)
- Electro Cell Manipulator (BTX) and Microprojectile gun (BioRad).
- Scanning Electron Microscope (SEM)
- DNA sequencing unit (BioRad)
- Wester Blotting Unit (Bangalore Genei, Bangalore)

Computer knowledge:

Statistical packages with working knowledge

- Microsoft Excel
- Origin 4.0
- Sigma Plot
- Pstat

General packages

- Microsoft word, MS Power Point, MS Picture Publisher, Adobe acrobat 4.0
- Gel documentation- Easy imaging software
- Corel – Corel word Perfect, Corel Presentation

Genetic analysis software

PHYLIP, ClustalW 1.74, Chroma, Seaview, DNASY5, OLIGO 4.0, BLAST, GenAlex, RasMol and other web based Bioinformatics software, AMOVA, Photo-Capt (Vilber Lourmat).

Personal profile:

Sex : **Male**
Date of Birth : **04/01/1978 (Fourth January Nineteen seventy eight)**
Parents Name : **S. Kalappa and S. Parvathamma**
Marital status : **Single**
Employment Reg. No : **2842/99**
Nationality : **Indian**
Languages Known : **English, Hindi, and Kannada**

I hereby certify and declare that, to the best of my knowledge and belief, all the particulars furnished above are true and correct nothing has been suppressed.

Place: Gulbarga
Date:

VIRUPAKSHI S

References:

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